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November 13, 2014 Reference No. 056394

Ms. Sheila Desai
Remedial Project Manager
United States Environmental Protection Agency – Region 5
77 West Jackson Boulevard (SR – 6J)
Chicago, Illinois 60604 – 3590

Dear Ms. Desai:

Re: Responses to U.S. EPA Comments and Feasibility Study Report (Revision 3)
Former Plainwell, Inc. Mill Property Operable Unit No. 7
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site
Allegan and Kalamazoo County

Conestoga-Rovers & Associates (CRA) has prepared this letter, on behalf of the Weyerhaeuser NR Company (Weyerhaeuser), in response to the United States Environmental Protection Agency's (U.S. EPA's) October 14, 2014 comments on the August 7,2014 Feasibility Study (FS) Report (Revision 2) for the former Plainwell, Inc. Mill Property (Site).

Consistent with your October 30, 2014 email, please find attached one printed and one electronic copy of the FS Report (Revision 3). In addition per your October 30, 2014 email, one printed and one electronic copy will be sent directly to Tetra Tech.

The FS Report (Revision 2) was submitted in accordance with the Statement of Work (SOW) for the RI/FS and the terms of the Consent Decree for the Design and Implementation of Certain Response Actions at Operable Unit #4 and the Plainwell, Inc Mill Property of the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site (Consent Decree), which became effective February 22, 2005.

The following presents responses to the U.S. EPA's October 14, 2014 comments consistent with the FS Report (Revision 2) dated August 7, 2014.

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RESPONSE TO U.S. EPA COMMENTS

REPORT GENERAL COMMENTS

U.S. EPA General Comment #1

EPA specific comment 41 on the FS Report (Revision 1) requested additional clarification on how the 2-Series and 3-Series alternatives comply with Part 201 cleanup criteria. This comment pertains to the comparative analysis of alternatives presented in Section 5.3.2 of the FS report. The response provided in the response to comment letter that accompanied FS Report Revision 2 refers to revisions in Section 5.2.3, which presents individual analyses of alternatives. Based on the response to this comment and a review of the text in FS Report Revision 2, it is still not clear which sections have been revised to address this comment.

Response

The comparative analysis of the soil alternatives presented in Section 5.3.2 has been modified to include additional discussion regarding the compliance with Applicable or Relevant and Appropriate Requirements (ARARs), including the Michigan Act 451, Part 201 Generic Residential Cleanup Criteria (Part 201 Cleanup Criteria), consistent with the *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (U.S. EPA, 1988), as applicable to Site and alternative conditions.

All Soil Remedial Alternatives except for Soil Remedial Alternatives 1, 2A and 2D comply with the ARARs, including the Part 201 Cleanup Criteria, identified within Table 2.1, and Sections 2.1, 5.2.2 and 5.2.3. The 2-Series Soil Remedial Alternatives conceptually include the consolidation and capping of metals-impacted soils at concentrations above the Part 201 Cleanup Criteria or calculated risk-based criteria for arsenic; however, Soil Remedial Alternatives 1, 2A and 2D cannot achieve the Preliminary Remediation Goals (PRGs) or ARARs as presented in Sections 4.1.1, 4.1.2.1 and 4.1.2.4, respectively. The "unrestricted" requirement referenced relates to residential use of the areas.

U.S. EPA General Comment #2

For the alternatives that are based on future land use, please state the criteria used for each future land use area (i.e., for mixed residential/commercial area 1 a future land use of

residential was used, etc.). It is implied and listed in the remedial investigation (RI) Report, but it was not clear where it was presented in the FS report.

Response

Redevelopment areas Residential Areas 1 through 4, and Mixed Residential/Commercial Areas 1 and 2 were compared to residential criteria/cleanup levels in the FS Report. Redevelopment areas Waterfront Plaza and Commercial Areas 1 through 4 were compared to non-residential/commercial criteria/cleanup levels in the FS Report. Table 3.3 presents a summary of the PRGs for each Soil Remedial Alternative by redevelopment area and proposed land use.

REPORT SPECIFIC COMMENTS

U.S. EPA Specific Comment #1

Executive Summary. ***The remedial alternatives are described. For Alternatives 2B, 2C, 3B and 3C, indicate what target cancer risk level is used for the polychlorinated biphenyls (PCB) Residential and Commercial Risk-Based Criteria for each alternative. It is assumed that 10-5 was used for each alternative (also stated later in the report), but it is unclear in the text. Also, please clarify in the 4th and 5th bullets on page 146, Section 3.2 and a few other places in the report with the similar text.***

Response

Risk-Based Criteria (RBCs) were developed for Soil Remedial Alternatives 2B, 2C, 3B, and 3C that are protective of human health direct contact exposure to PCBs in soil for trespassers, recreational users, residents, commercial workers, utility workers, and construction workers. Two RBCs were initially developed: one protective of carcinogenic health impacts and a second protective of non-carcinogenic health impacts. The RBC for each receptor was determined to be the lower value between carcinogenic and non-carcinogenic health impacts. The RBCs are based the most sensitive receptor that is present within a given redevelopment area, and a target cancer risk level of 1.0×10^{-5} and target non-cancer hazard quotient of 1.0.

The FS Report (Revision 3) has been modified to address the above comment.

U.S. EPA Specific Comment #2

Executive Summary. The text states "Alternatives 2A and 2D were not retained because consolidation of arsenic-impacted soil materials on-Site would exceed the proposed cleanup levels associated with these alternatives; therefore, implementation of Alternatives 2A and 2D would not meet the remedial objectives." It is unclear how consolidation on-site would exceed the proposed cleanup levels and not meet the remedial objectives. The remedial objectives can be met with a cover system. This should be clarified that the alternatives were removed because the alternatives require cleaning up to residential criteria or lower (background) regardless of future land use criteria and therefore there is no area on-site that the soil consolidation area can be located because the soil would be greater than the cleanup levels.

Response

Please refer to the response to U.S. EPA General Comment #1 for additional discussion on Soil Remedial Alternatives 2A and 2D. The Executive Summary has been modified for the requested clarification.

U.S. EPA Specific Comment #3

Section 2.3, Page 141. The text should clearly state which remedial action objectives (RAO) are being addressed during this FS versus the RAOs to be addressed during the groundwater portion. It would be best to separate the soil RAOs and the groundwater RAOs or differentiate them between the media.

Response

Section 2.3 has been modified to clarify which RAOs relate to soil versus groundwater and which RAOs are being addressed in the FS Report (Revision 3).

U.S. EPA Specific Comment #4

Section 3.2, Page 142, Paragraph 1. Since it is stated that the figures present the conceptual area of materials impacted above preliminary remediation goals (PRG) for the 11 re-development areas, you should note in that paragraph that figures for Waterfront Plaza

(one of the 11 redevelopment areas) are not included because there are no impacted materials above PRGs.

Response

Section 3.2 has been modified to include a statement that figures for the Waterfront Plaza Area were not included in the FS Report (Revision 3) because no impacted soils above the PRGs were identified requiring remedial action to meet the RAOs.

U.S. EPA Specific Comment #5

Section 3.2, Page 142, Paragraph 3. The last sentence has extra words in it; remove "to the comparison".

Response

Section 3.2 was modified accordingly to address this comment.

U.S. EPA Specific Comment #6

Section 4. The alternatives each define RAO 1. RAO 1 should be modified to include PCBs as it was done in Section 2.

Response

PCBs were added to the description for RAO 1 for Sections 4.1.2.1, 4.1.2.2, 4.1.2.3, 4.1.2.4, 4.1.3.1, 4.1.3.2, 4.1.3.3, and 4.1.3.4.

U.S. EPA Specific Comment #7

Sections 4.1.2 and 4.1.3. The text states that no action is required for any of the alternatives to meet RAO 4 (preventing avian and mammalian receptor exposure). If no action is required to meet this RAO, the text should be revised to explain why this RAO has been developed.

Response

Based on the information reviewed and presented in the RI Report (Revision 2), further evaluation and refinement of the constituents identified as chemicals of potential ecological concern (COPECs) during the Steps 1 and 2 was recommended based on several Site-specific factors, including reasonable maximum exposure (RME) concentrations rather than maximum concentrations, alternative ecological benchmarks for specific receptor groups (soil invertebrates, terrestrial plants, birds, and mammals), and historical use and generation as Step 3a of the U.S. EPA 8-step process. For bioaccumulative chemicals of concern (BCOCs), food chain models were used to evaluate the potential for risk to upper trophic level receptors. A Step 3 refinement of constituents of potential ecological concern was conducted as part of the FS Report (Revision 3) as presented in Appendix B and was used to development the ecological RAOs and PRGs.

The refinement of the screening-level ecological risk assessment (SLERA) previously included in the approved RI Report (Revision 2), was conducted for locations within the riparian corridor where redevelopment was not likely to result in an elimination of exposure pathways to potential COPECs and BCOCs. The refinement process is part of the RI/FS development and as such needed to be completed following the U.S. EPA guidelines.

RAO 4 was developed to demonstrate that the ecological pathway and receptors for soil along the riparian corridor were evaluated separately from the remaining areas of the Site based on the information presented in the RI Report (Revision 2).

As part of the comment and response process for the FS Report, the ecological screening has been refined and PRGs were re-calculated. The results of the recalculation identified that upon completion of the *Step 3 Refinement of Constituents of Potential Ecological Concern and Development of Ecological RAOs* presented in Appendix B of the FS Report, the 95 percent UCL concentration was below the ecological PRG for carbazole, HMW PAHs, cadmium, copper, mercury, selenium, and zinc. Consequently, it can be concluded that concentrations of carbazole, HMW PAHs, cadmium, copper, mercury, selenium, and zinc in soil within the corridor of the Kalamazoo River are protective of avian and mammalian wildlife and that risk management is not required to achieve RAO 4. The 95 percent concentration for lead is within the range of the lower end and upper end PRGs calculated as presented in Appendix B. Remedial efforts were determined to be necessary based on the ecological risk assessment for lead impacted areas within the riparian corridor. Removal of the sample location (DG-4 at 0 to 2 feet below ground surface) with the highest concentration from the dataset reduces the

95 percent UCL concentration to a value below both the lower end and upper end PRGs, and removal of four sample locations (DG-4, TP-341, SB-201, and SB-203 at 0 to 2 feet below ground surface) from the dataset reduces remaining lead concentrations below the lower end PRG. The four sample locations identified above were already targeted for soil removal as part of the remedial actions developed to address human health impacts and do not result in the generation of additional soil volume.

Section 1.2.7 presents a summary of the results of the RI Report (Revision 2) SLERA, Section 2.2.5 and Appendix B present the development of the ecological PRGs through the Step 3 refinement process, and Section 2.3 presents RAO 4 based on the information presented in Sections 1.2.7 and 2.2.5, and Appendix B.

U.S. EPA Specific Comment #8

Sections 4.1.2 and 4.1.3. The text presents primary components of the 2-Series and 3-Series alternatives. Both sections should include a bullet clearly stating that all alternatives (except 3A) would leave varying amounts of soil containing arsenic at concentrations above the PRG beneath existing building slabs.

Response

Sections 4.1.2 and 4.1.3 have been modified to include a bullet identifying that varying amounts of soil above the PRG for arsenic would remain in place under the concrete slabs.

U.S. EPA Specific Comment #9

Section 4.1.2, Page 153, Paragraph 1. The text states "..the off-Site disposal of impacted soil above the PRGs that does not meet the criteria for the consolidation and capping component of the alternative..." Please detail what the "criteria" are for consolidation and capping component or reference the section where the criteria are discussed.

Response

Section 4.1.2 has been modified to include a reference to the location of the discussion regarding the "criteria" utilized for the consolidation and capping component of the alternative.

U.S. EPA Specific Comment #10

Section 4.1.2, Page 153, Bullet 5. The text states that a primary component of Soil Remedial Alternative 2-Series is "Consolidation/soil relocation of inorganics-impacted material at concentrations above the residential PRGs and below the non-residential/commercial PRGs on a designated non-residential/commercial land use portion the Site, as applicable based on the sub-alternatives". It is unclear whether the soil above non-residential/commercial land use PRGs is being disposed of on-site or off-site. Based on the first paragraph of the section, it says off-site disposal. Off-site disposal bullet should include soil above commercial/non-residential PRGs if sending this soil offsite. Please clarify in the subsections of this section for the 2 Alternatives series whether this material will be consolidated and capped on-site or disposed of off-site.

Response

The text within the "off-Site disposal" bullet in Section 4.1.2 was modified to include the words "and/or non-residential/commercial PRGs". Sections 4.1.2.1 and 4.1.2.4 were not modified due to the fact that none of the material would meet the criteria for on-Site consolidation. Sections 4.1.2.2 and 4.1.2.3 include statements identifying which materials would be eligible for on-Site consolidation and which impacted materials would require off-Site disposal.

U.S. EPA Specific Comment #11

Section 4.1.2, Page 154, Bullet 6. The text does not match the stated response to EPA specific comment 18 in the response to comment letter that accompanied FS Report Revision 2. The text should be revised to be consistent with that response.

Response

The bullet discussing the requirement of cap maintenance as part of the deed restrictions for areas of PCB contamination remaining in place $\geq$ 1 mg/kg and $\leq$ 10 mg/kg for high occupancy areas, if applicable based on the PRGs (i.e., 1 mg/kg or risk-based criteria), was inadvertently omitted in the FS Report (Revision 2) text. The bullet has been added to Section 4.1.2 to be consistent with the response previously provided on August 7, 2014.

U.S. EPA Specific Comment #12

Section 4.2.1, Page 177, Paragraph 3. This paragraph mentions a paved parking lot over the consolidation area. If this is part of the remedy and affects effectiveness as indicated, it should be included in the description of the alternatives and considered as part of the protectiveness of the cap. It would serve as an engineering control. This is the only section in the FS where it is mentioned. Please clarify.

Response

A paved parking area is included in the redevelopment plans for the Site; however, a schedule or anticipated date for the installation of the parking area has not been set or forecasted. Therefore, the discussion regarding the additional effectiveness of the impervious surface was removed from the FS Report (Revision 3) text.

U.S. EPA Specific Comment #13

Section 5.2.2, Page 195, Paragraph 2. This paragraph discusses the five-year review. The five-year review would also need to review the integrity of the containment cap, building slabs, and any other engineering controls to make sure that the soil remedy is protective for human health and the environment. Institutional controls (IC) are non-engineered instruments such as administrative and/or legal controls that minimize the potential for human exposure to contamination by limiting land or resource use. This paragraph should be clarified that the five-year review would cover more than just ICs for the property.

Response

The paragraph in Section 5.2.2 has been revised to state that the five-year review of the remedy would be required to document that the redevelopment of the property has complied with the Institutional Controls in place and that Engineering Controls are being maintained and continue to be protective of human health and the environment. This language was also included in Section 5.3.2 as applicable for the Soil Remedial Alternative 3-series options.

U.S. EPA Specific Comment #14

Section 5.3.1, Page 216, Paragraph 3. The text states that analyte concentrations in backfill will be compared to Part 201 criteria based on land use. The text should acknowledge that if

those concentrations in backfill do not meet residential (unrestricted) land-use criteria, IC will be required at all areas where backfill is placed.

Response

The text in Section 5.3.1 has been revised to identify that chemical testing on imported backfill utilized for the project would be compared to applicable PRGs based on the selected Soil Remedial Alternative. Backfill material imported to the Site will be of equal or better chemical makeup than existing Site soils. Areas of the Site that will be limited to Non-Residential/Commercial use will include a restrictive covenant that limits the use of these areas to Non-Residential/Commercial activities.

U.S. EPA Specific Comment #15

Section 5.3.7, Page 224, Paragraph 1. A typographical error is apparent in the first sentence of the paragraph—Alternative 3C is mentioned twice, while no reference to Alternative 3B appears.

Response

The text has been modified to correct the typographical error.

U.S. EPA Specific Comment #16

Section 5.3.7, Page 225, Paragraph 0. The text states that Alternatives 2B and 3B include placement of a liner over consolidated soil in Commercial Area 4. The text should be revised because Alternative 3B does not include on-site containment of soil.

Response

The text in Section 5.3.7 has been modified to indicate that Soil Remedial Alternatives 2B and 2C include the same reliance on the concrete building slabs as Alternatives 3B and 3C, and also include the liner over the consolidated soils in Commercial Area 4 as an additional engineering control.

U.S. EPA Specific Comment #17

Figures. Figures should be checked for accuracy. For example, Figures 3.18 and 3.21 should, but do not, show all areas where soil will be excavated beneath existing slabs. According to the text in the last paragraph of Page 194, soil is to be excavated beneath the slabs at Buildings 3A, 9C, 25 (southern portion), 28, the train shed (no slab), 6A, and 1A; however, not all of these locations are shown as hatched on the figures to indicate planned excavations.

Response

The figures were reviewed and no changes were necessary based on the PRGs selected for each alternative. Excavation areas are indicated on the figures for Buildings 3A, 6A, 25 (southern part), 28 and the Train Shed for all alternatives. Excavation efforts are not necessary to achieve the PRGs under Alternative 2B, 2C, 3B, or 3C for Buildings 1A and 9C. Figures 3.21 and 3.32 include a notation that excavation efforts are not required within Commercial Area 3 for Alternatives 2B/3B or 2C/3C, which includes Building 9C.

The text of the report has been modified to specify that the concrete slabs will be removed from these areas (Buildings 1A, 3A, 9C, 25, and 28) and provide additional information regarding the excavation required within these areas based on the PRGs for the specific alternatives.

U.S. EPA Specific Comment #18

Tables 4.2.A-4.2.G. Based on the FS text, no soil is to be removed from the Waterfront Plaza for any of the alternatives. However, in Table 4.2.A, Alternative 1 states that arsenic, chromium, and magnesium remain in the Waterfront Plaza, but no contaminants remain for the other alternatives according to their corresponding tables, Tables 4.2.B-4.2.G. Please clarify. Based on page 122, the human health risk assessment (HHRA) states "The calculated cancer risks and hazards for the trespasser, recreational user, commercial worker, and utility worker direct contact (incidental ingestion, dermal contact, and ambient air inhalation) with soil were below the target risk level of 1 x 10-4, at or above the target risk level of 1 x 10-6 (arsenic was the major contributor), and below the target hazard of 1." Since the Waterfront Plaza does not appear to be at a level of unacceptable use and unacceptable exposure (i.e., residential use scenario with no restrictions) than an IC may be necessary. It is also not clear what future land use (i.e., residential, non-residential, recreational, industrial/commercial, etc.) the Waterfront Plaza is expected to be in the FS Report. It is

assumed that commercial-recreational and non-residential use was used for the Waterfront Plaza. If so, a deed restriction will need to be implemented limiting the land to commercial and/or recreational use and the IC tables would need to be updated.

Response

The identified exceedances presented in Table 4.2.A in the FS Report (Revision 2) for arsenic, chromium and magnesium in the Waterfront Plaza Area are limited to exceedances of the Part 201 Residential and/or Non-Residential Drinking Water Protection Criteria or Groundwater-Surface Water Interface Protection Criteria. As discussed in Sections 2.2 and 3.2 of the FS Report (Revision 3), exceedances of Part 201 Residential/Non-Residential Cleanup Criteria for VOCs, SVOCs, and inorganics (with the exception of arsenic and PCBs, as detailed below) were screened based on anticipated future land use. Exceedances were further screened against a subset of the Part 201 Residential/Non-Residential Cleanup Criteria including the Volatile Soil Inhalation Criteria (VSIC), Soil Volatilization to Indoor Air Criteria (SVIAC), particulate Soil Inhalation Criteria (PSIC), and Direct Contact Criteria (DCC), and Soil Saturation Screening Levels. Exceedances of soil criteria protective of the groundwater pathway, such as the Drinking Water Protection Criteria (DWPC) and Groundwater-Surface Water Interface Protection Criteria (GSIPC), were not specifically or separately used in the evaluation of soil volumes because they relate to the groundwater and are anticipated to be addressed through other measures, if necessary. Therefore, no excavation is planned in the Waterfront Plaza Area. Tables 4.2.A through 4.2.G have been modified to reflect the exclusion of exceedances for the DWPC and GSIPC, consistent with the evaluation of remedial alternatives in the FS Report (Revision 3).

The Waterfront Plaza Area was evaluated for commercial-recreational and non-residential use during the development of the FS Report (Revision 3) as identified in Table 3.3; however, no exceedances of the commercial-recreational or non-residential land use criteria were identified based on the pathways evaluated.

U.S. EPA Appendix A Specific Comment #19

Appendix A, Table 15. Table 15 presents the derivation of the risk-based concentrations (RBC) for PCBs in soil for residential exposure. The RBCs were checked and found to be accurately calculated. However, an error was identified in the presentation of the non-carcinogenic RBC equation. The first term of the denominator is missing the conversion factor (CF) term. The non-carcinogenic RBC equation should be corrected accordingly.

Response

The non-carcinogenic RBC equation in Table 15, as well as the corresponding equation in Table 14, was edited to correctly present the calculation utilized.

U.S. EPA Appendix B Specific Comment #20

Appendix B, Ecological Risk Assessment Step 3 Report. EPA's original comments on the ecological risk assessment Step 3 report had requested that CRA use the toxicity reference values (TRV) that had been approved by EPA to: (1) carry out the risk calculations, (2) address any issues with the conservative nature of the TRVs in the uncertainty section, and (3) provide a weight of evidence approach to evaluate overall potential risks to ecological receptors from contamination at the site. Most of these comments were addressed in the FS Report (Revision 2) document; however, in calculating the PRGs for the site, CRA used a new TRV value for lead that had not been used in the risk assessment portion of the report. CRA states that this value is more appropriate for the receptors likely to be exposed. To be consistent with the risk assessment, however, the PRGs should be calculated with use of the TRVs to which EPA and CRA previously had agreed. If CRA wants to include the "revised TRV" as an alternative PRG for lead, that is acceptable. EPA then could select the PRG it believes most appropriate for the site.

Response

Appendix B of the FS Report (Revision 3), *Ecological Risk Assessment Step 3 Refinement of Constituents of Potential Ecological Concern and Development of Ecological RAOs* (ERA Report), has been modified to include the risk calculations for lead consistent with the previously discussed and approved Toxicity Reference Value (TRV). A discussion has been included regarding the conservative nature of the TRV in the uncertainty section of the ERA Report. PRGs for lead have been presented as a lower end (140 mg/kg) and higher end PRG (812 mg/kg) based on the use of a lower end LOAEL (8.75 mg/kg-day) and a higher end LOAEL (42.7 mg/kg-day).

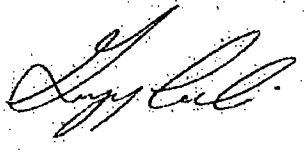
CONESTOGA-ROVERS
& ASSOCIATES

November 13, 2014 Reference No. 056394

The above information represents responses to U.S. EPA's October 14, 2014 comments on the August 7, 2014 version of the FS Report (Revision 2). Should you have any questions with regard to this letter, please do not hesitate to contact the undersigned.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES



Gregory A. Carli, P. E.

GAC/jmd/56/Pwl.
Encl.

cc: Paul Bucholtz (MDEQ) – three hard copies
Jim Saric (U.S. EPA) – electronic only
Leslie Kirby-Miles (U.S. EPA) – electronic only
Erik Wilson (City of Plainwell) – one hard copy
Richard Gay (Weyerhaeuser) – one hard copy
Kim Hughes (Weyerhaeuser) – electronic only
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